WHAT IS CLAIMED IS:

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1. A method for decompressing a compressed data stream whose decoded output comprises lines of two-dimensional data, comprising:

receiving a compressed data stream;

receiving at least one pointer to a location in the compressed data stream whose decoded output comprises a location on a line of data;

receiving decoding information for each received pointer that enables decoding from a point within the compressed data stream addressed by the pointer in one reentry data set;

for each received pointer, performing:

(i) accessing the location in the compressed data stream addressed by the received pointer; and

(ii) using the received decoding information to decode compressed data from the accessed location.

2. The method of claim 1, wherein the decoded output comprises image data.

3. The method of claim 1, further comprising:

buffering the decoded data; and

outputting the buffered decoded data.

4. The method of claim 3, wherein the buffered decoded data generated comprises a data section having a line width that is less than a line width of the decoded input compressed data stream.

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5. The method of claim 1, wherein the received pointer and decoding information are included in a reentry data set.

6. The method of claim 5, further comprising:

generating the reentry data sets when decoding an input compressed data stream; and

outputting an output compressed data stream that comprises the compressed data decoded using the reentry data sets.

7. The method of claim 6, wherein the input and output compressed data streams are identical.

8. The method of claim 6, wherein the input compressed data stream includes more data than the output compressed data stream.

9. The method of claim 6, wherein the reentry data sets are generated by a reentry decoder that decodes the input compressed data stream and passes each reentry data set and the output compressed data stream to a decoder to decode the output compressed data stream using the reentry data sets.

10. The method of claim 1, wherein the reentry data sets are generated by an encoder when encoding the compressed data stream.

11. The method of claim 1, further comprising using previously decoded data to decode the compressed data stream.

12. The method of claim 11, wherein the previously decoded data used to decode the compressed data stream is included in the reentry data sets.

13. The method of claim 11, wherein the previously decoded data is generated when decoding the compressed data stream using the reentry data sets.

14. The method of claim 13, wherein additional previously decoded data in the reentry data set is also used to decode the compressed data stream.

15. The method of claim 11, wherein the decoding information includes probability estimates used to decode the compressed data stream at the location addressed by the pointer.

16. The method of claim 15, wherein the data is decoded using an Adaptive Bi-Level Image Compression (ABIC) algorithm.

17. The method of claim 11, wherein decoding begins from the location in the compressed data stream addressed by the pointer in a first reentry data set, wherein the first reentry data set further includes all the previously decoded data needed to decode from the pointer in the first reentry data set to generate as output a first line of data.

18. The method of claim 17, wherein for each reentry data set following the first reentry data set, further comprising using previously decoded data generated using another reentry data set.

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19. The method of claim 18, wherein each reentry data set following the first reentry data set further includes previously decoded data to use when decoding from the location in the compressed data stream addressed by the pointer in the reentry data set.

20. The method of claim 11, wherein the previously decoded data used to decode the compressed data stream comprises a set of nearest neighbor bit values to the bit value generated by decoding the location in the compressed data stream addressed by the pointer.

21. The method of claim 1, further comprising:

receiving multiple pointers to different sections of the compressed data stream and receiving decoding information for each received pointer; and

sequentially decoding a portion of each section of the compressed data stream beginning at the location in the compressed data stream addressed by one of the pointers using the decoding information for the pointer.

22. A system for decompressing a compressed data stream whose decoded output comprises lines of two-dimensional data, comprising:

a computer readable medium including:

(i) a compressed data stream;

(ii) at least one pointer to a location in the compressed data stream whose decoded output comprises a location on a line of data;

(iii) decoding information for each received pointer that enables decoding from a point within the compressed data stream addressed by the pointer in one reentry data set;

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means for accessing the location in the compressed data stream in the computer readable medium addressed by the received pointer; and

means for using the decoding information in the computer readable medium to decode compressed data from the accessed location.

23. The system of claim 22, wherein the decoded output comprises image data.

24. The system of claim 22, further comprising:

means for buffering the decoded data; and

means for outputting the buffered decoded data.

25. The system of claim 24, wherein the buffered decoded data generated comprises a data section having a line width that is less than a line width of the decoded input compressed data stream.

26. The system of claim 22, wherein the computer readable medium further includes reentry data sets, wherein each reentry data set includes one pointer and the decoding information for the pointer.

27. The system of claim 26, further comprising:

means for generating the reentry data sets when decoding an input compressed data stream; and

means for outputting an output compressed data stream that comprises the compressed data decoded using the reentry data sets.

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28. The system of claim 27, wherein the input and output compressed data streams are identical.

29. The system of claim 27, wherein the input compressed data stream includes more data than the output compressed data stream.

30. The system of claim 27, further comprising:

a reentry decoder for generating the reentry by decoding the input compressed data stream and transmitting each reentry data set and the output compressed data;

a decoder for receiving the transmitted reentry data set and decoding the output compressed data stream using the reentry data sets.

31. The system of claim 22, further comprising:

an encoder for generating the reentry data sets when encoding the compressed data stream.

32. The system of claim 22, further comprising means for using previously decoded data to decode the compressed data stream.

33. The system of claim 32, wherein the previously decoded data used to decode the compressed data stream is included in the reentry data sets.

34. The system of claim 32, wherein the previously decoded data is generated when decoding the compressed data stream using the reentry data sets.

35. The system of claim 34, wherein additional previously decoded data in the reentry data set is also used to decode the compressed data stream.

36. The system of claim 32, wherein the decoding information includes probability estimates used to decode the compressed data stream at the location addressed by the pointer.

37. The system of claim 32, wherein decoding begins from the location in the compressed data stream addressed by the pointer in a first reentry data set, wherein the first reentry data set further includes all the previously decoded data needed to decode from the pointer in the first reentry data set to generate as output a first line of data.

38. The system of claim 37, further comprising means for using previously decoded data generated using another reentry data set for each reentry data set following the first reentry data set, further comprising.

39. The system of claim 38, wherein each reentry data set following the first reentry data set further includes previously decoded data to use when decoding from the location in the compressed data stream addressed by the pointer in the reentry data set.

40. The method of claim 32, wherein the previously decoded data used to decode the compressed data stream comprises a set of nearest neighbor bit values to the bit value generated by decoding the location in the compressed data stream addressed by the pointer.

41. The method of claim 1, wherein the computer readable medium further concludes multiple pointers to different sections of the compressed data stream and decoding information for each pointer; and

means for sequentially decoding a portion of each section of the compressed data stream beginning at the location in the compressed data stream addressed by one of the pointers using the decoding information for the pointer.

42. An article of manufacture for decompressing a compressed data stream whose decoded output comprises lines of two-dimensional data, wherein the article of manufacture includes program logic performing:

receiving a compressed data stream;

receiving at least one pointer to a location in the compressed data stream whose decoded output comprises a location on a line of data;

receiving decoding information for each received pointer that enables decoding from a point within the compressed data stream addressed by the pointer in one reentry data set;

for each received pointer, performing:

(i) accessing the location in the compressed data stream addressed by the received pointer; and

(ii) using the received decoding information to decode compressed data from the accessed location.

43. The article of manufacture of claim 42, wherein the decoded output comprises image data.

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44. The article of manufacture of claim 42, wherein the program logic further performs:

buffering the decoded data; and

outputting the buffered decoded data.

45. The article of manufacture of claim 44, wherein the buffered decoded data generated comprises a data section having a line width that is less than a line width of the decoded input compressed data stream.

46. The article of manufacture of claim 42, wherein the received pointer and decoding information are included in a reentry data set.

47. The article of manufacture of claim 46, wherein the program logic further performs:

generating the reentry data sets when decoding an input compressed data stream; and

outputting an output compressed data stream that comprises the compressed data decoded using the reentry data sets.

48. The article of manufacture of claim 47, wherein the input and output compressed data streams are identical.

49. The article of manufacture of claim 47, wherein the input compressed data stream includes more data than the output compressed data stream.

50. The article of manufacture of claim 47, wherein the reentry data sets are generated by a reentry decoder that decodes the input compressed data stream and passes each reentry data set and the output compressed data stream to a decoder to decode the output compressed data stream using the reentry data sets.

51. The article of manufacture of claim 42, wherein the reentry data sets are generated by an encoder when encoding the compressed data stream.

52. The article of manufacture of claim 42, wherein the program logic further performs using previously decoded data to decode the compressed data stream.

53. The article of manufacture of claim 52, wherein the previously decoded data used to decode the compressed data stream is included in the reentry data sets.

54. The article of manufacture of claim 52, wherein the previously decoded data is generated when decoding the compressed data stream using the reentry data sets.

55. The article of manufacture of claim 54, wherein additional previously decoded data in the reentry data set is also used to decode the compressed data stream.

56. The article of manufacture of claim 52, wherein the decoding information includes probability estimates used to decode the compressed data stream at the location addressed by the pointer.

57. The article of manufacture of claim 56, wherein the data is decoded using an Adaptive Bi-Level Image Compression (ABIC) algorithm.

58. The article of manufacture of claim 52, wherein decoding begins from the location in the compressed data stream addressed by the pointer in a first reentry data set, wherein the first reentry data set further includes all the previously decoded data needed to decode from the pointer in the first reentry data set to generate as output a first line of data.

59. The article of manufacture of claim 58, wherein for each reentry data set following the first reentry data set, further comprising using previously decoded data generated using another reentry data set.

60. The article of manufacture of claim 59, wherein each reentry data set following the first reentry data set further includes previously decoded data to use when decoding from the location in the compressed data stream addressed by the pointer in the reentry data set.

61. The article of manufacture of claim 52, wherein the previously decoded data used to decode the compressed data stream comprises a set of nearest neighbor bit values to the bit value generated by decoding the location in the compressed data stream addressed by the pointer.

62. The article of manufacture of claim 42, wherein the program logic further performs:

receiving multiple pointers to different sections of the compressed data stream and receiving decoding information for each received pointer; and

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sequentially decoding a portion of each section of the compressed data stream beginning at the location in the compressed data stream addressed by one of the pointers using the decoding information for the pointer.